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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/001,924	11/15/2001	John R. Saffell	C1054.01/A	8940

27774 7590 06/20/2003

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EXAMINER

TUNG, TA HSUNG

ART UNIT	PAPER NUMBER
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1753

DATE MAILED: 06/20/2003

7.

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/001,924

Applicant(s)

SAPPELL BZAL

Examiner

T. TUNG

Group Art Unit

1753

Paper No. 7

— The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address —

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- ☐ Responsive to communication(s) filed on \_\_\_\_\_
- ☐ This action is **FINAL**.
- ☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

## Disposition of Claims

- ☒ Claim(s) 1-13 is/are pending in the application.
- Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- ☒ Claim(s) 1-13 is/are rejected.
- ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- ☐ Claim(s) \_\_\_\_\_ are subject to restriction or election requirement

## Application Papers

- ☐ The proposed drawing correction, filed on \_\_\_\_\_ is ☐ approved ☐ disapproved.
- ☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner
- ☐ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119 (a)-(d)

- ☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119 (a)-(d).
- ☒ All ☐ Some\* ☐ None of the:
  - ☒ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_
  - ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a))

\*Certified copies not received: \_\_\_\_\_

## Attachment(s)

- ☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). \_\_\_\_\_
- ☒ Notice of Reference(s) Cited, PTO-892
- ☐ Notice of Draftsperson's Patent Drawing Review, PTO-948
- ☐ Interview Summary, PTO-413
- ☐ Notice of Informal Patent Application, PTO-152
- ☐ Other \_\_\_\_\_

Office Action Summary

Art Unit: 1102

Claims 1-13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1, line 8, it is unclear if the “gas diffusion means” includes the gas space under cap 3, or merely meant to be the contact between the outer peripheral portion of the working electrode support 21 with the outer peripheral portion of the counter electrode support 61. In this regard, note the language of claim 13, lines 5-6, “diffusion means partially or fully enclosing a volume around the working and counter electrodes”. If the diffusion means does not include the gas space, would it still enclose the volume around the electrodes?

Claim 2, line 1, --the-- should be added before “counter”.

Claims 5 and 6, line 2, “disc-like” is vague.

Claim 13, line 5, it is unclear whether the “gas diffusion means” includes the gas space under cap 3, as discussed before.

Claim 13, line 6, what is the subject of “having”? The wording would suggest the gas diffusion means, but it is not understood how the gas diffusion means has electrolyte supply means.

Claim 13, line 8, the spelling of “characterized” should be corrected. If this is also present elsewhere in the application, similar correction should be made.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

Art Unit: 1102

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3, 7-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Aston et al 5,395,507.

Aston discloses a sensor comprising an electrolyte reservoir 23, a working electrode 1, a second electrode 29 and a third electrode 2. Each electrode is made of a catalyst deposited on a porous PTFE support tape. See figure 2; col. 4, lines 5-50.

Even though electrode 29 is called a reference electrode in the patent, it is considered to meet applicant's "counter electrode". Terms such as "counter" and "reference" merely describe an operating function of an electrode, not any structural feature. The instant claims are directed to an apparatus, not a method of operation. Therefore, the intended function of electrode 29 in Aston is irrelevant for the purpose of this rejection.

In the patent, wicking means 10 and 27 extend beyond electrode 29 and thus can provide a path for the electrolyte around the electrode. In as much as the support tape of electrode 29 appears to be exposed at its outer edge, diffusion of gas can take place at this outer edge. Note that the language of claim 1 does not even require a diffusion path to the working electrode. Even if it did, gas diffusion in the patent can take place between the outer edge of the support tape of electrode 29 and the outer periphery of the working electrode's support tape by way of the gas space within the sensor. As for the diffusion taking place from a second part of the outer

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edge of the counter electrode than the electrolyte path first part, just consider any portion (say the left side portion) of the counter electrode as a first part that provides the electrolyte path, and any other portion (say the right portion) as the gas diffusion portion.

In regard to claim 7, electrode 2 of the patent can be considered a "reference electrode".

Claims 1, 2, 7, 8, 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Campbell et al 4,525,704.

Campbell discloses a sensor comprising an electrolyte reservoir 44, a working electrode 24, a counter electrode 38 and a reference electrode 36. Each electrode is supported on a membrane. A fluid wicking path 55 is shown at the outer periphery of the counter electrode's support membrane, and this outer periphery is exposed for gas diffusion that can lead to the working electrode by way of the gas space in the sensor. See col. 2, line 52 to col. 4, line 41.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3, 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Campbell et al in view of Aston et al.

Claim 3 differs by calling for the counter electrode to be sandwiched by wicking layers.

Claim 9 differs by calling for the electrode support tape to be made of PTFE.


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Aston discloses wicking layers 10 and 27 (col. 4, lines 20-30) sandwiching an electrode and a PFTE electrode support tape (col. 3, line 19). It would have been obvious for Campbell to adopt sandwiching wicking layers for counter electrode 38 in view of Aston so as to enhance the electrolyte wetting of the counter electrode. As for the PFTE support tape, that is the most common material used for gas diffusion electrodes. The incorporation of known features from analogous prior art functioning as expected is within the skill of the art.

The various features recited in claims 4-6 and 11-13 are not shown or fairly suggested by the prior art of record. These claims would be allowable if the 35 USC 112 rejection were overcome. In the case of claims 4-6, 11 and 12 they would also need to be in independent form.

Chapples et al 5,632,875 discloses (fig. 6) a sensor similar to that of Aston. Bytyn 5,635,627 discloses a sensor with electrodes that have support tapes extending beyond the catalyst portions. See figure 2.

The examiner can be reached at 703-308-3329. His supervisor Nam Nguyen can be reached at 703-308-3322. Any general inquiry should be directed to the receptionist at 703-308-0661. A fax number for TC 1700 is 703-872-9310.



Ta Tung

Primary Examiner

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